



**MC3810-2  
1/3-Inch  
Monochrome  
Camera**

**Installation/  
Operation Manual**

**C1905M (10/99)**

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## DESCRIPTION

The MC3810-2 is a black and white video camera that is designed for use in a monitoring system.

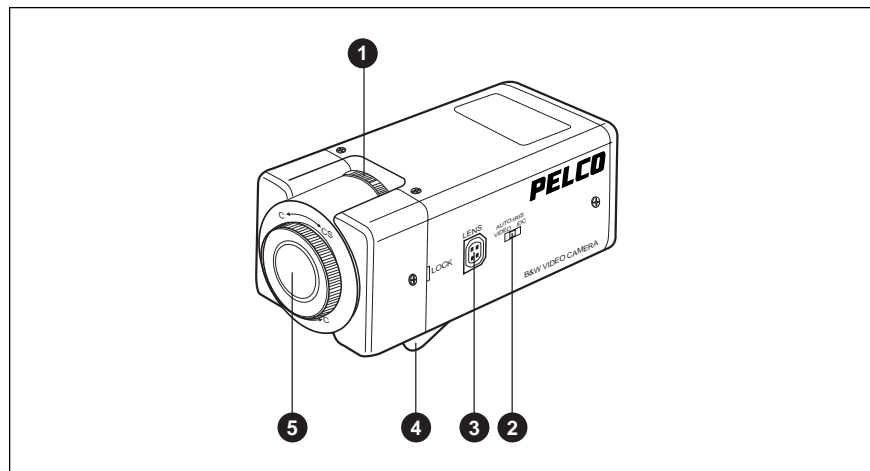
### Features

High resolution and high sensitivity with a 1/3-inch CCD imager  
CCD iris function  
AGC (Automatic Gain Control)  
AC line lock  
C or CS lens mount  
Compatibility with auto iris lenses that are controlled by either DC or video signals  
Level and backlight control adjustments for various lighting conditions  
Isolated power circuit

## LOCATION AND FUNCTION OF PARTS

### TOP/FRONT/SIDE

Refer to Figure 1 for parts on the top, front, and side of the camera.



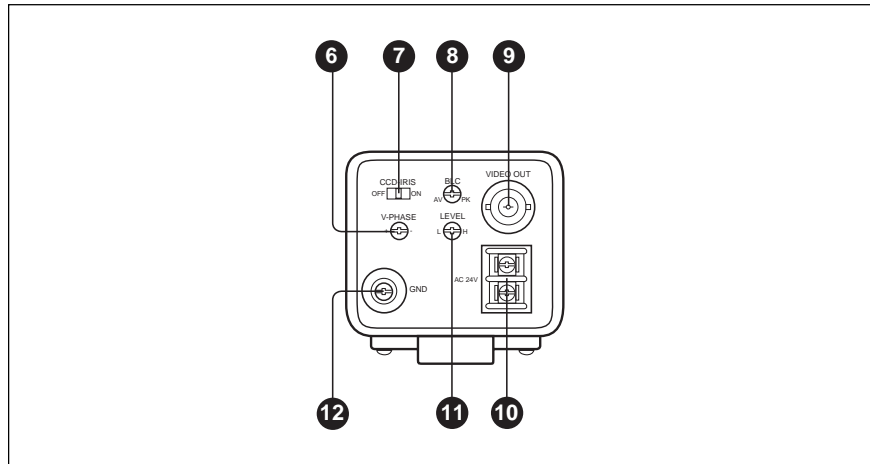
**Figure 1.** Location of Top, Front, and Side Parts

*NOTE: When the auto iris lens selection switch is set to VIDEO, "hunting" may occur. If this occurs, use the LEVEL L/H adjustment screw on the lens to change the incident light level. When adjusting the incident light level, set the ALC (Automatic Light Control) adjustment screw to AV.*

- 1** Focal length adjustment ring and locking screw  
Use this ring to adjust the focal length (the distance between the lens mounting plane and the image plane). Use the locking screw to lock the focal length.
- 2** Auto iris lens selection switch (DC/VIDEO)  
Use to select the control signal for the auto iris lens.  
DC: For auto iris lenses controlled by DC signals.  
VIDEO: For auto iris lenses controlled by video signals.
- 3** Lens connector  
This four-pin socket supplies power and control signals to an auto iris lens.
- 4** Tripod adapter  
The tripod adapter can be attached to either the top or bottom of the camera using the three attached screws (UNC 1/4-20). The adapter is attached at the factory to the bottom of the camera.
- 5** Lens mount  
Use to attach a C- or CS-mount lens. To attach a lens, turn the focal length adjustment ring to the appropriate position. The factory setting is CS mount.

## REAR

Refer to Figure 2 for parts on the rear of the camera.



**Figure 2.** Location of Rear Parts

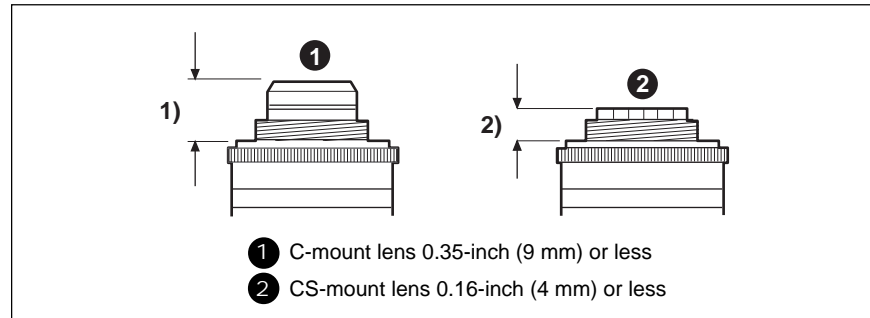
*NOTE: The BLC screw cannot be used when the camera has an auto iris lens that is controlled by a video signal.*

*NOTE: The LEVEL screw cannot be used when the camera has an auto iris lens that is controlled by a video signal.*

- 6 V-PHASE adjustment screw  
Use to adjust the vertical phase of cameras synchronized by line lock.
- 7 CCD-IRIS ON/OFF switch  
When using a manual iris lens, set the switch ON to automatically adjust the sensitivity according to the incident light conditions. When using an auto iris lens, set the switch OFF.
- 8 BLC (Backlight Control) adjustment screw  
Use to compensate for backlight conditions when using a manual iris lens (when CCD-IRIS switch is set to ON) or a DC-controlled auto iris lens.
- 9 VIDEO OUT connector  
This is a BNC-type connector.
- 10 Screw terminals for power  
Connect an external Class 2 power supply of 24 VAC.
- 11 LEVEL adjustment screw  
Use to compensate for the video level when using a manual iris lens (when the CCD-IRIS is set to OFF) or a DC-controlled auto iris lens.
- 12 Ground terminal  
This is a screw-type terminal.

## INSTALLATION

The lens must be either a C- or CS-mount type of less than 2.2 pounds (1 kg). The protrusion behind the mounting surface must be within the limits as shown in Figure 3.




**Figure 3.** Lens Mounting Dimensions

The camera is supplied with a lens connector for inserting the power and control cable of an auto iris lens. Before connecting an auto iris lens, however, you first have to replace the lens cable plug with the one supplied with this camera. To replace the plug:

- a. Detach the old plug from the lens cable.
- b. Solder the wires to the pins of the new plug (refer to Figure 4). For cable pin assignments, refer to the instruction manual for the lens.

1	Cover	
2	Lens cable (not supplied)	
3	Rib (If the cable is thick, cut this off.)	
4	Plug (supplied)	
5	Pin 4	Video signal control: Ground DC control: DRV-
6	Pin 2	Video signal control: Not used DC control: CONT+
7	Pin 1	Video signal control: Power supply (9 VDC, 50 mA maximum) DC control: CONT-
8	Pin 3	Video signal control: Video signal (0.7 Vp-p) DC control: DRV+

**Figure 4.** Replacing Lens Plug

 **CAUTION:** Keep the lens mount cap on the camera when a lens is not attached.

1. Unscrew the lens mount cap.
2. Loosen the locking screw. According to the type of lens, adjust the focal length by turning the focal length adjustment ring. Re-tighten the locking screw.
3. Screw in the lens, and turn it until it is secure.
4. Insert the lens plug in the LENS connector. Skip this step if you are installing a manual iris lens.
5. Mount the camera.
6. Connect a 75-ohm coaxial cable from the VIDEO OUT connector on the camera to the VIDEO IN connector on a video monitor or other video input.
7. Connect the camera to a 24 VAC, 60 Hz, Class 2 power supply.

## BACKFOCUS ADJUSTMENT

1. Set the CCD-IRIS switch on the rear of the camera OFF.
2. Set the iris wide open and the focus on infinity or a distant object. If you have an auto iris lens, use a neutral density filter or other means to decrease the amount of light so that the iris will open as wide as possible.
3. Turn the focal length adjustment ring for the best picture.
4. If you have a zoom lens, zoom to a close object and adjust the lens controller or focus for the best picture. Repeat steps 2-4 until the lens remains in focus throughout the zoom range.
5. If you have a lens with a manual iris, set the CCD-IRIS switch ON.

## VERTICAL PHASE ADJUSTMENT

The vertical phase adjustment is used only when using more than one camera. If cameras are not synchronized to the AC line, switching between cameras may produce what appears to be roll on the monitor.

To adjust the vertical phase, turn the V-PHASE screw on the rear of the camera (while switching as rapidly as possible between two camera views) until the switching is clean and there is no vertical roll or flip.

## INCIDENT LIGHT LEVEL ADJUSTMENT

If the picture is too dark or if the picture's highlights are extremely overexposed, adjust the LEVEL adjustment on the rear of the camera. The adjustment can only be used for a manual iris lens (CCD-IRIS switch is ON) or DC-controlled auto iris lens.

1. Turn toward L (low) to make the picture darker.
2. Turn toward H (high) to make the picture brighter.

## BACKLIGHT CONTROL ADJUSTMENT

You can compensate for backlight conditions by turning the BLC (Backlight Control) adjustment screw on the rear of the camera. When using this unit under backlight conditions, turn the BLC adjustment screw toward AV. The adjustment can only be used for a manual iris lens (CCD-IRIS switch is ON) or DC-controlled auto iris lens.

## TROUBLESHOOTING

The following conditions may be observed and are not necessarily a fault of the camera.

Vertical smear

This may occur when viewing a bright object or an intense reflection.

Patterned noise

A fixed pattern may appear over the entire monitor screen when the camera is operated at a high temperature.

Jagged picture

This becomes noticeable when viewing stripes, straight lines, or similar patterns.

# SPECIFICATIONS

## GENERAL

Image Device	1/3-inch interline transfer CCD
Picture Elements	510 (H) x 492 (V)
Sensing Area	3.3 mm (H) x 4.4 mm (V)
Scanning System	525 lines, 2:1 interlace
Sync System	AC line lock
Horizontal Resolution	380 TV lines
Minimum Illumination	0.06 lux at f1.2 (30 IRE, AGC on)
Signal-to-Noise Ratio	More than 45 dB (AGC off)
Automatic Gain Control	Control AGC on
Phase Control	V-phase control ( $\pm 90^\circ$ )
CCD Iris Control	On/off switchable 1/60 to 1/100,000 second
Backlight Compensation	Pk/Av pot
Video Out	1.0 Vp-p, 75 ohms, sync negative, BNC type
Acceptable Lens Mass	2.2 lb (1 kg) maximum
Auto Iris Lens	Video- or DC-driven type (non-EE amplifier/non-ALC type), selectable by switch on side of camera

## ELECTRICAL

Power Requirements	24 VAC, 60 Hz (screw terminals)
Power Consumption	2.5W
Connectors	Video out (BNC) Lens (4-pin) GND terminal 24 VAC terminals

## MECHANICAL

Lens Mount	C/CS mount (back-focus adjustable)
Camera Mount	Removable mounting plate fits either top or bottom of camera housing; uses 1/4-inch UNC-20 screw

## ENVIRONMENTAL

Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	-40° to 140°F (-40° to 60°C)
Humidity	20 to 80%

## PHYSICAL

Construction	Aluminum case
Finish	Light gray
Dimensions	2.31 (W) x 2.25 (H) x 4.49 (L) inches (5.87 x 5.72 x 12.99 cm)
Unit Weight	11 oz. (0.32 kg)
Shipping Weight	1 lb (0.45 kg)

## ACCESSORIES

Supplied Accessories	Lens mount cap 4-pin plug for lens cable
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*(Design and product specifications subject to change without notice.)*

## REGULATORY NOTICES

NOTE: This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### PRODUCT WARRANTY AND RETURN INFORMATION

#### WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship for a period of one year after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

#### RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

*If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:*

Service Department  
Pelco  
3500 Pelco Way  
Clovis, CA 93612-5699

*If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:*

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco  
3500 Pelco Way  
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors  
473 Eccles Avenue  
South San Francisco, CA 94080 USA  
Phone: 650-737-1700  
Fax: 650-737-0933

### REVISION HISTORY

Manual #	Date	Comments
C1905M	10/99	Original version.

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